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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/053,840 | 10/25/2001 | Carmine J. Vetrano | SAET-001CP2 61966-017 | 6495 |

7590 09/30/2003
David M. Mello
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EXAMINER

JEFFERY, JOHN A

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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3742

DATE MAILED: 09/30/2003

12

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/053,840

Applicant(s)

VETRANO, CARMINE J.

Examiner

John A. Jeffery

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 19 and 20 is/are allowed.
- 6) ☒ Claim(s) 1-18 and 21-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☒ Interview Summary (PTO-413) Paper No(s). 13.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Withdrawal of Final Rejection

In view of the telephone interview with David Mello on 9/24/03, for the reasons set forth in the accompanying Interview Summary Form, PTOL-413, the final rejection mailed 9/9/03 is withdrawn. The examiner regrets any inconvenience caused by the previous office action. Rejections based on new grounds follow.

Statutory Text Omitted

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior office action.

Claim Rejections - 35 USC § 103

Claims 1, 5-7, 9, 10, 12-15, 21, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over IT431255 in view of Remseth et al (US1949658). IT431255 discloses a fluid heater comprising a "heater core" 5 with electric heating element 7, a fluid conduit 8a spirally surrounding an outer surface of the heater core and communicating with the "heat chamber" (numeral 9) such that injection of fluid does not contact the heating element. See Figs. 1-3. Although the fluid heated by IT431255 is water, such isolated fluid heaters commonly heat both liquids and gases (e.g., air). For example, Remseth et al (US1949658) on Page 3, lines 16-20 notes that although the invention is called an "air heating gun," it nevertheless heats liquids as well. As in IT431255, the heater of Remseth et al (US1949658) uses a tortuous flow path surrounding a heater core that ensures prolonged fluid contact with the heater core, yet

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ensures the fluid remains isolated not only from the heating element, but also external contaminant sources. See Fig. 1 and 2. In view of Remseth et al (US1949658), it would have been obvious to one of ordinary skill in the art to heat fluid in the form of a gas (e.g., air) in lieu of liquid in the heater of IT431255 so that gaseous fluids could be heated in addition to liquids thereby broadening the versatility of the fluid heating device to diverse fluid types.

The claims also differ from IT431255 in calling for the heater core to be replaceable by being spaced from the helical coil. Providing replaceable heater cores in electric air heaters is conventional and well known in the art as evidenced by Remseth et al (US1949658) noting "heater core" 26, 27, 26a which is attached by means of screws and threaded connections to other structures as well as being spaced to enable removal. See Fig. 1. Note spacer 27a spacing the heater core from the outer sinuous conduit. In view of Remseth et al (US1949658), it would have been obvious to one of ordinary skill in the art to provide a replaceable heater core in the previously described apparatus so that the heater core could be readily removed from the housing for repair or replacement.

The claims also differ from IT431255 in calling for a cylindrical heater core with a heater coil wound around the core. But such a structure is well known in the art as evidenced by Remseth noting the spirally wound electric heater 21 around heater core 26, 27 in Fig. 1. As contrasted with cores having other shapes, a cylindrical core enables uniform spacing between the spiral heater and the core. In view of Remseth, it would have been obvious to one of ordinary skill in the art to provide a cylindrical core to

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ensure uniform spacing between the spiral heater and the core thus more uniformly heating gas within the core.

With regard to claim 5, in view of the secure, sealed connection of the conduit 29 and heat chamber 26 as best shown in Fig. 1 of Remseth et al (US1949658), no criticality is seen in the provision that such connection be welded as opposed to a removable connection of Remseth et al (US1949658).

Claims 2, 3, 8, 17, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over IT431255 in view of Remseth et al (US1949658) and further in view of Miller (US6244323). The claims differ from the previously cited prior art in calling for the temperature to be sufficient to remove an outer coating of an optical fiber. Electrically heating and directing heated gas flow to remove fiber coatings is well known as evidenced by Miller (US6244323) noting col. 5, lines 1-40 where a stream of hot gas at 820° C is directed to an optical fiber to remove its coating. According to col. 6, lines 9-21, even lower gas temperatures (e.g., down to 550° C) are effective to remove fiber coatings. In view of Miller (US6244323), it would have been obvious to one of ordinary skill in the art to provide a heated gas temperature within the claimed range in order to heat the gas to effectively remove the coating from an optical fiber.

While the heater of the cited prior art is not used for heating optical fibers, such a limitation merely recites the intended use of the apparatus structure and does not form part of the structure *per se*. It is well settled that a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention

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and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). Also, a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the structural limitations of the apparatus claimed. See *Ex parte Masham*, 2 USPQ 2d 1647 (1987).

Here, the cited prior art heater is capable of heating a variety of workpieces-- including optical fibers. In order to remove fiber coatings, one of ordinary skill in the art would be motivated to heat the gas to the claimed temperature range in light of the teachings of Miller (US6244323).

Regarding claims 8 and 17, it is well settled that where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233,235 (CCPA 1955). Here, the selection of the given dimensions of length and width are tantamount to routine optimization well within the level of one of ordinary skill in the art given a desired convective heating effect.

Claims 4 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over IT431255 in view of Remseth et al (US1949658) and further in view of Fortune

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(US5483040). The claims differ from the previously cited prior art in calling for the time required to heat the injected air to not exceed 30 seconds. However, heating a gas with an electric heater in the shortest possible time prior to convectively heating a workpiece is conventional and well known in the art as evidenced by Fortune (US5483040) noting col. 1, lines 30-38. Fortune (US5483040) states that the gas "may be heated instantly as it flows across, in heat exchange relation, [to] the heat source and is instantly applied to the work point." (emphasis added.) The express teaching of "instantly" heating the gas to operating temperature (1500° C -- col. 1, line 65) suggests an extremely short heating time. Although not expressly stated, such an "instant" time would reasonably suggest to one of ordinary skill in the art a time less than 30 seconds. In view of the desirability of instantly heating the gas to 1500° C in Fortune (US5483040), it would have been obvious to one of ordinary skill in the art to heat the gas to operating temperature in the previously described apparatus so that the operating temperature was very quickly obtained thereby improving efficiency and minimizing thermal inertia.

The claims also differ from the previously cited prior art in calling for a temperature controller. However, controlling an electric heater to maintain a predetermined temperature is known in the art as shown by Fortune (US5483040) in col. 3, lines 35-50. In view of Fortune (US5483040), it would have been obvious to one of ordinary skill in the art to provide a temperature controller in the previously described apparatus so that so that the temperature were automatically maintained thereby precluding the need to manually monitor the temperature and manually control the heater accordingly.

Claims 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over IT431255 in view of Remseth et al (US1949658), Miller (US6244323) and further in view of Gammelin (US5196667). The claims differ from the previously cited prior art in calling for controllably releasing the fluid (air) during relatively short periods of time. Providing a pulsed flow from a compressed gas source in an electric gas heating application is conventional and well known in the art as evidenced by Gammelin (US5196667) noting col. 2, lines 54-56 where compressed air is pulsed to ensure "a particularly precisely defined heat action." In view of the well known advantages of pulsing compressed air in a convective heating application, it would have been obvious to one of ordinary skill in the art to provide pulsed airflow in the previously described apparatus so that turbulence is created by pulsing the airflow thereby enhancing the convective heating effect.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over IT431255 in view of Remseth et al (US1949658) and further in view of SU1009405. The claim differs from the previously cited prior art in calling for quartz material. Forming both the heater core and the heat chamber of an electrically heated fluid heater of quartz is conventional and well known in the art as evidenced by SU1009405 noting the figure where the "heat chamber" 3 and the outer conduit 2 are formed of quartz so that radiant energy from electric heater 4 is not unduly absorbed by the structures due to their transparency and radiant energy thus passes unimpeded to the fluid within the

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structures. In view of SU1009405, it would have been obvious to one of ordinary skill in the art to form the claimed structures from quartz in the previously described apparatus so that radiant energy from electric heater 4 is not unduly absorbed by the structures due to their transparency and radiant energy thus passes unimpeded to the fluid within the structures.

Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over IT431255 in view of Remseth et al (US1949658) and further in view of Sikka et al (US6437292). The claim differs from the previously cited prior art in calling for a 5000-hour heater life. The use of electric heaters with such life spans is conventional and well known in the art as evidenced by Sikka et al (US6437292) noting col. 6, lines 19-27 where an electric heating element is disclosed as having a 5000-20,000 hour life depending on operating power. In view of Sikka et al (US6437292), it would have been obvious to one of ordinary skill in the art to provide an element with a 5000 hour life in the previously described apparatus so that the element did not require frequent replacement thus saving maintenance costs.

Allowable Subject Matter

Claims 19 and 20 are allowable over the art of record.

Response to Arguments

Applicant's arguments filed 7/25/03 and presented in the telephone interview have been considered but are deemed to be moot in view of the new grounds of rejection.

Conclusion

Any inquiry concerning this or earlier communications from the examiner should be directed to John A. Jeffery at telephone number (703) 306-4601 or fax (703) 305-3463. The examiner can normally be reached on Monday-Thursday from 7:00 AM to 4:30 PM EST. The examiner can also be reached on alternate Fridays.

The fax phone numbers for the organization where this application or proceeding is assigned are:

| | |
|------------------|----------------|
| Before Final | (703) 872-9302 |
| After Final | (703) 872-9303 |
| Customer Service | (703) 872-9301 |

Any inquiry of a general nature or relating to the status of this application should be directed to the Technology Center receptionist whose telephone number is (703) 308-0861.



**JOHN A. JEFFERY
PRIMARY EXAMINER**